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FOR THE BETTERMENT OF THE
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TRAINING METHODS FOR GUARD TRAINING CAMPS

By JOHN C. KUHNS

Supervisor Whitman National Forest, Region Six

As a result of eleven years of experience in training camps for members of the protection organization on three different national forests, I have evolved certain pretty well defined principles and methods applicable to guard training, but I also have learned that rigid adherence to any fixed method or program must be avoided if satisfactory results are to be obtained. In as much as new lookout men and firemen, old-timers with years of experience and various types of cooperators all are in attendance at the same camp, the big problem is to make the training course interesting and attractive to each type of individual and yet fill the needs of each. I am a firm believer in thorough instruction in fundamentals, both for new men and those who have been through the training mill several times.

Although I have been asked only to discuss methods of training, I feel that some mention should be made of the importance of "incentive to learn" as a prerequisite of any training course. Now-a-days it would seem that the mere fact that a man is offered a job would be sufficient incentive for him to learn all that he could about the work he was expected to do. However, I doubt if this is the case even now, and it certainly was not several years ago.

To some extent at least we have resorted to each of the following "incentives" for men to do good work at the training camps:

1. Make it plain that all "dead wood" discovered at the camp will be dropped or transferred to jobs where the willingness or ability to absorb training is not as essential as it is for Forest guards.
2. Arouse enthusiasm and a spirit of loyalty to the Service.
3. Give a small increase in salary to the man who makes the best showing at the camp.
4. Stimulate a spirit of competition in as much of the training work as is practicable.
5. Give the "old timers" and others who display a "know-it-all" attitude a definite responsibility in laying out work and demonstrating methods to new men. Make them set an example for the others so that they then will have to be on their toes to maintain the reputation given them as being experienced men. Incidentally, in doing the job assigned to them the old-timers are really doing certain work in advance of its assignment to the others, and often-times they receive almost as much coaching as the others, whether they realize it or not.
6. Resort to the element of "surprise" to stimulate interest and attentiveness so that the trainees will not always know in advance just what they might be called upon to do.
7. In extreme cases make an inattentive trainee ridiculous before the entire group by making him demonstrate his ignorance of a subject which had just been taught but which he had failed to grasp due to

his lack of interest. Obviously this method is subject to abuse and should be used with discretion.

The training work in itself varies more or less as to technique, in accordance with the ideas and qualifications for imparting knowledge on the part of the instructors. On the Whitman forest all of the District Rangers and most of the supervisor's staff organization take an active part in the training and all possible leeway is allowed each trainer to use his own methods as long as he adheres to the outline and the time allowed for each subject.

All of the training is conducted out-of-doors. A separate table and benches for each squad constitutes the equipment for "classroom" work.

In general we try to follow the following order of procedure for each major subject:

- (a) Lectures
- (b) Demonstration (or examples cited)
- (c) Actual practice
- (d) Discussion of good and bad points brought out in practice work.
- (e) Individual tests
- (f) In some cases (e) is followed by group tests to develop leadership.
- (g) Competitive assignments (not always practicable)

Some of the lectures, such as "fire prevention", the explanation of the forest fire plan and Forest Service policies are given to the entire group. Talks on such specific topics as the "Forest map", "the compass", "the fire-finder", etc., are given to classes or squads (as we call them) of from six to eight trainees. I might state here that we have tried the method where one squad is assigned to an instructor who trains that squad in almost every subject; also, the method in which one instructor teaches only one or two subjects and the squads go from one instructor to another for the various subjects.

We have found, however, that a combination of the two methods has given best all-around results. Our present system provides that, except in actual fire suppression practice or in the few courses in which the entire group is given instruction by one man, all of the instructors will be handling the same subject at the same time but that there will be a different squad for each instructor for each subject. By having each instructor teach several subjects with a different squad for each subject we are able to obtain a better cross-section of opinion as to the qualifications of each trainee, and also to give a more balanced training to each man. There is a wide variation in the ability and qualifications of the instructors to teach certain subjects, as well as in the ability of each one to do any kind of training at all, and under our present system each trainee gets a sample of the kind of training put out by each instructor. One result, which is incidental but well worth while, is a very noticeable improvement in the year-long men, not only in the quality of training done by them but also in their knowledge of all the training camp subjects. A short-term man is placed in charge of each squad and it is the duty of a squad leader to see to it that each of his men is available for instruction at the proper time and place.

The training camp program is arranged so that lectures are so inter-

spersed with field work that it is seldom necessary for the trainees to be listeners for over an hour at a stretch.

The following is an example of how we aim to make the training work dovetail:

A certain squad receives instructions in compass work, pacing, map reading, use of section line markers and fire fighting. Following the instruction in each subject the squad members have a chance to see the work demonstrated by an experienced man, and then to do the work themselves, usually on individual problems. Their work is checked and good and bad practices brought to each one's attention to the fullest extent practicable in the time available. Those whose work indicates the need for additional instruction are given special attention and possibly assigned another problem as an additional test.

Then the entire squad will be assigned the job of putting out an actual fire, which is small enough to permit of reasonably quick work but which gives plenty of opportunity to test the knowledge and ability of the men. The instructors and other trainees are observers but are forbidden to offer advice or criticism until the fire is reported out. To stimulate interest each observer makes a guess as to the length of time it will take the squad to put the fire out. It costs ten cents a guess. Side bets also are encouraged. Five minutes is added to the control time for each spark found by the observers after the squad leader reports the fire out. (You can rest assured that those who overestimated the time make a diligent search for sparks.)

Later on the entire group of trainees (except the lookout men who are receiving special instructions in lookout work) will be placed under the supervision of a district ranger and will work on a larger and more difficult fire (an acre in which there are plenty of logs and snags is large enough). The Ranger is expected to demonstrate how a crew should be organized and equipped and supervised so as to secure the most effective results. The rest of the instructors are observers and critics.

Following this and usually during the last night at the camp comes the acid test of each fireman's ability to put into use the knowledge of smoke-chasing which he has acquired. Throughout the previous three days the instructors and old-timers drop hints as to the final ordeal which is to come so as to build up the proper atmosphere. Each fireman is allowed to select as an assistant a lookout man or cooperator, and promptly at dark the fireman is given tools, compass, headlights or lanterns and written instructions for going to a certain fire. The instructions refer him to a section line board on a certain road or trail and give the azimuth and distance from there to the fire. The fireman is in charge of the two-man crew and he is required to find the fire assigned to him, put it out and return to camp before daybreak. The fires usually consist of stumps or logs set on fire by instructors and experienced firemen who also determine the azimuth courses and measure or compute the distance to the fire. In case of bad fire weather lanterns are used instead of actual fires for obvious reasons. The distances seldom are over two miles but a conscientious effort is made to crowd as many obstacles as possible into the course so that swamps, precipitous slopes, log and pole jungles all help to make the night hideous for the poor trainees.

Those who are successful, and between 75 and 90 per cent find their "fires", are very emphatic in stating that they gained more self-confidence as a result of this test than in all the rest of the training. I overheard one fireman telling the world at large that, after finding his fire, he was certain that he could find any fire, any place and any time because it wasn't possible for a fire to occur in a worse place.

There is a lot of work involved in laying out these individual smoke-chasing problems and in the follow-up to make certain that the fire have been put out completely, but I believe that the results justify the effort.

I have gone into some detail in describing some of the phases of training in order to show how the order of procedure previously outlined can be used to lead up to a climax so as to sustain interest up to the last.

I am not satisfied that I have answered the question "How do you teach men at guard training camps?" Much could be written about the technique of teaching. As I see it, however, we have so much material and information available to transmit to trainees that the important question is "how to get the essential things across to the guards in three days in such a manner that the training in fundamentals will leave a permanent imprint on the mind of each trainee".

Most of our instructors at the Whitman guard camps probably have never given any particular thought to the technique of training. They have had experience in the subjects which they teach and they naturally stress the practical rather than the theoretical phases. By drawing on their own experiences they can explain in simple terms how a knowledge of a certain subject has helped them. The practicability and simplicity of their instructions is a big factor in getting results in training the mixture of college students, ranchers and pick-ups that are in attendance at our camps. Incidentally the members of the year-long organization get some very good training—both as a result of preliminary work prior to the camp and as a result of acting as instructors at the camp.

HIGH LIGHTS IN MOTORWAY COSTS

By EVAN W. KELLEY

Regional Forester, Region One

Average Cost per Mile—Finished Road.

10-ft. roads	\$ 938.00
12-ft. roads	1357.00

The spread of \$419 between 10-ft. and 12-ft. roads is greater than it should be, due to excess work by a poor foreman on one project. Justifiable spread is about \$225 per mile.

Average Cost of Clearing (per mile).

	<i>Average</i>	<i>Maximum</i>
10-ft. roads	\$327	\$612
12-ft. roads	402	598

Average Cost of Bulldozer Work (per mile).

10-ft. roads	\$242.00
12-ft. roads	333.00

Average Cost of other Grading.

10-ft. roads	\$301.00
12-ft. roads	478.00

Average Cost of Bulldozing and Grading.

10-ft. roads	\$543.00
12-ft. roads	811.00

Average Cost of Drainage.

10-ft. roads	\$ 68.00
12-ft. roads	120.00

Total Mileage, Calculated Average Yardage Cost.

	<i>Mileage</i>	<i>Yardage</i>	<i>Cost per yard</i>
10-ft. roads	52.2	108,973	.27
12-ft. roads	59.9	153,102	.27

Average Cost of Flat Work—Flats and Slopes Under 30%.

	<i>Stations</i>	<i>Cost per Station</i>
10-ft. roads	681.2	\$7.62
12-ft. roads	856.4	9.12

Average Clearing Cost per Acre.

		<i>Trees per Acre.</i>
Light	\$113	up to 199
Medium	238	200 to 349
Heavy	298	About 350 per acre and above.

Percentage of total cost—different classes of work.

Clearing	32%
Bulldozer	25%
Grading	34%
Drainage	9%

Time Analysis for Season.

Overall days on all projects	1922	
Fire	211	
Other	391	(Sundays & Saturday afternoons)

Percentage effective on roads 74%

Percentage of expenditure for services of different classes.

	<i>Labor</i>	<i>Equipment</i>	<i>Material</i>	<i>Misc.</i>
10- ft. road	40	38	17	6
12-ft. road	40	37	18	5
Extreme	49	48	31	9
Minimum	35	26	7	1

Average Size Crew.

	<i>Average</i>	<i>Maximum</i>	<i>Minimum</i>
10-ft. road	13	14	7
12-ft. road	13	15	11

Variation in cost of individual projects not clearly traceable to size of crew. Heavier clearing requires more man-power.

Progress per month in miles. (exclusive of time on fire)

10-ft. roads	3-9/10
12-ft. roads	3-4/10

Total cost per day.

10-ft. roads	\$ 95.00
12-ft. roads	118.00
Average	104.00

Throughout, the skill or lack of it shows up in costs of individual projects. Difference of skill in foremanship is perhaps the largest single variable to reckon within road costs. To retain a poor foreman in the hopes of "making him" after certain fundamental weaknesses are revealed in his behavior and work is to gamble on a 1 to 9 shot that Uncle Sam will lose.

Clearing is a heavy part of road construction cost in the "dark woods" region. The most economical methods of doing this class of work have not yet been worked out. The variables are numerous: slope, soil types, moisture, condition of soil, timber types, condition of trees (sound or rotten) and size of trees. All have a vital bearing upon cost of the different methods used to date.

On one job 5887 trees 8 inches to 16 inches in diameter were pulled and skidded off the right-of-way at an average cost of \$1.05 per tree. This job averages 692 trees per mile or about 340 trees per acre. On another, 1200 trees, 83 per mile, 24 inches to 36 inches in diameter, badly decadent, were shot standing and disposed of with tractor for \$3.90 per tree. Trees under 24 inches were pulled as a rule, but tests later proved that shooting down and hauling off was cheaper, due to nature of soil and breakage under the strain of the lines. On a third job containing about 350 to 400 trees per acre, trees up to 30 inches cost \$1.43 per tree to pull and 36 inch trees cost \$4.25 to pull and dispose of. For large trees in dry soil, costs of pulling runs high due to breakage of trees and rigging. It now appears that to shoot these larger members is invariably cheaper.

Investigation of clearing methods will be continued until a good working knowledge of the economies of clearing under the various conditions are gained.

Much more experimentation is also needed to indicate the best balanced use of the bulldozer and the grader.

NOTE: The above paper is published as an example of the thing we have been discussing—an administrative study. It was not written for publication—I borrowed it—nor did it get into the administrative studies plan. As all such studies should, it originated with an administrative officer who needed facts on which to base administrative decisions. It is the most vital form of research because it has direct application and is used. It needs recognition. Why not put such studies into our plans?

P. K.

REVIEWS

Organization Engineering: By Henry Denison Chapters III and IV on Impulsion and Training.

It is scarcely fair to the author to call this a review or even a "brief". In reality all I have done is to pick out parts which have some relation to our problem without attempting to give an all-around treatment of the authors idea. The book as a whole is a most excellent one and later I may attempt a more complete review.

Dennison discusses organization not so much from the analytical viewpoint that we discussed last year as from the humanistic, or psychological side. When men work together in groups there must be organization, that is, there must be measures adopted to promote harmony, prevent friction and direct their efforts toward the common objective. Men are naturally too individualistic to work together without organization. And no organization is so perfect that it entirely prevents cross-purposes and friction. and the more capable the individual units the more friction.

That is, individually capable men are most difficult to control. An organization may fail because its men are too good. Fairly good results with little effort can be obtained from a group of easy-going men but a group of ambitious "go-getters" are hard to handle.

While all men are different, yet all men are alike, motivated by common impulses. If they were not, organization would be impossible. It is upon these common factors—human nature—that organization is built.

Since organizations are for work—doing something—one of their basic factors is the answer to "Why do men work?". Without going into that in detail, most motives can be classed under some one of the following five: 1. Fear of the consequences of not working, usually expressed as "fear of discharge". 2. Mercenary motives—money. 3. Self-respect—standing in community. 4. Liking for work—craftmanship. 5. Regard for the purpose of the work.

Most men are influenced by a combination of motives which they themselves have not analyzed. They recognize 2, deny 1, do not understand 3, and frequently profess 4 and 5. Yet each man's work is characterized by the one of these that predominates, and no man will do his best unless influenced by all five. "One" will get some work from all, and fairly good work from a few. Men will work hard for money, at least for a time, but they work harder if in addition they like the work and it gives them recognition, prestige. A slave army was never efficient, a mercenary army much better but never reliable, while an army of volunteers enlisted for a cause is always best. Men actuated by one and two are the kind that "play up the boss" or "play for a showing".

Habit, custom, tradition have a big influence on men. They act the way they are supposed to act. This thing "isn't done" or that thing "isn't right" are factors that should not be neglected. The tradition "He gets his man" is said to influence profoundly a certain organization. Men tend to do what is expected of them. We live up to our traditions.

New men coming into an organization must "sense" these things. They must get the "feel of the group". It comes more from "attitude" than from things they are told. In your training camps a very important and lasting part of the training comes from the "gang" and not the instructor. Take back old men largely with this in mind. Every man wants to be one of the crowd but no man wants to be *just* one of the crowd. We want to do something distinctive—individualistic. Each must have some "wholesome and necessary nourishment to his ego."

But do not forget number five given above: Men like to believe the thing they are doing is worthwhile. The purpose of the work must be made to appeal. It is useless to ask or demand loyalty or tell them they "ought". If the purpose is worthy and if properly presented it will win loyalty for itself.

However, "as an organization succeeds in impelling its members to greater efforts it finds it more and more important that these efforts be steered in the right direction". "At the very beginning of a person's relationship with an organization, the nature of his place and work in it should be made clear." Men dislike uncertainty. They like to know exactly what is expected of them. Further, there is a very decided inclination to do what is expected of them. To take advantage of this inclination requires exact instruction and good task-setting. This means that the job must be known in detail and "described with definiteness and clarity."

"Upon the basis of full description of the job there can usually be planned for it a method of training which will help to develop skill in a shorter time, and eventually a higher degree of skill than a man could ordinarily get if left to himself." "The task of explaining is too often left either to those who are too close to the job to see it accurately or to those who have not the ability to describe it clearly." Even for simple jobs it is well to have exact specifications. Learn the correct method from the beginning and prevent the formation of incorrect habits. This does not mean that it is always best to start right in on the job expecting to gain speed and skill with practice. Take typing for example. Beginning with exercises fundamental to future speed is superior to starting with the job and risking the slow laborous habits that usually result. The same idea applies in many other cases—foremanship for example. Many of the mistakes of poor foremen are due to having been started on the job without specific preforeman training.

And in conclusion remember this "a goodly part of operating management is really teaching." "Each member of an organization, in addition to a knowledge of his own work, needs to have some degree of knowledge of the purposes and the structure of the whole." Also that "a man changes but little in a day"—or three days.

You will find it interesting to study Kuhns' paper in relation to these ideas taken from Dennison. You will find for example that Kuhns appeals directly to all five of motives Dennison says a man has for working. He appeals also to "group" instincts and tries to make the new men "sense" Whitman traditions. Does he have it all? If not, what is left out?

SUGGESTIONS FOR DISCUSSION

While the quality of work done in the guard training camps is recognized as being high and results of great value, yet there is no one that is not anxious to improve both. Kuhns gives you an insight into what he is doing and why. His methods differ both in general plan and in details from the methods of many of you. Are his methods scientific; that is, do they conform to what we have been taught as basic training principles?

You will notice that Kuhns devotes a lot of attention to morale training—to building **up** the right “mental attitude” toward the job. You will remember, in pamphlet number 4, a review of an article by Putnam which claimed that the right mental attitude was the greatest single factor contributing to good work. He claimed that this had been proven by research methods. If that is true for workers in direct contact with a supervising officer, is it not more so for one working largely without direct supervision. You will remember also that Vetter in his discussion of planning included in his program “morale building”. What is this thing we call morale and how is it built?

But while mental attitude is important it isn't enough. Fire suppression is a highly technical job, even that part performed by firemen. These men must also be taught how to do things, a lot of things, and do them well enough that you can depend on them. There are many things to teach and three days is not much time. How are we going to make the most of it?

In your discussions do not limit yourself to my questions. Include also methods of your own or other ideas or questions that add to a complete consideration of the question.

QUESTIONS

1. Discuss the general plan of the camp; layout, equipment, organization, etc.
2. We are told in the first paragraph that the big problem is to make the course “interesting and attractive”. Is it and if so how? What are some of the essentials in arousing interest?
3. Comment on the 7 incentives, and suggest others.
4. Comment on the “a” to “g” instruction procedure.
5. “Each trainer uses his own methods.” There has been a good deal of consideration given by some to training instructors. Does it pay or has Kuhns the right idea? Does a man necessarily know how to teach all he knows? What about Dennison's idea that a man may be too close to a job to be a good instructor—he doesn't see it from the beginner's point of view? Does an untrained instructor usually accept responsibility for training, that is putting it over and not just telling or showing? Does he accept a failure as his own or does he blame the trainee for not learning?
6. “Explanation of the Forest Fire Plan”—should this come near the beginning or the end of the course and why?
7. “Seldom necessary for the trainees to be listeners for over an hour at a stretch”?

8. My questions deal with details, mostly, but for a three day training period do we not need to get down to details? Discuss such other details as appeal to you.

Please go back to our discussions of administrative studies: Sum up briefly your idea as to how the matter now stands as judged from the discussions. How are we going to get some of these problems we have discussed into our administrative studies plans, or are we?

May I have your discussion of this lesson by April 20?



DISCUSSIONS OF LESSON 5

This includes Scott's paper on the Office, Hilton's paper on Measuring Accomplishment, and Mahan's paper on Making a District Pay.

There is little difference of opinion on the office question. Scott's paper seems to have expressed just what you wanted. Further, it may interest you to know that just this morning I saw a letter from a Regional Forester recommending to the Forester that a study be made of the report situation. So possibly something may be done on a bigger scale than we had anticipated. If such a study is started it might lead to a study of other things that you have suggested in your discussions—plans, records, instructions, etc. But if such a study is made, I wonder how many of you will be surprised if it finds that we have too few reports instead of too many. I can think of at least a dozen more that would be nice to have.

In one of the discussions there is a story about Wrigley telling an executive to sit with his feet on the desk, smoke and think up ways to make more money. That is all well enough provided one completes the entire operation. But too many men think they are big executives when they have completed only the first half of the formula. "Think up ways", that is the real test even though psychologists do tell us that the position suggested is not conducive to thought and that if you are actually thinking—not dreaming—you will probably forget to smoke.

There are some very encouraging suggestions on measuring accomplishment. I hope very much that some of them get into the administrative studies program. The problem is just as important as your papers indicate and it is too difficult to expect satisfactory solution without study. A lot of progress could be made by following up the suggestions in your papers.

The rating scale to which Hilton refers is "Efficiency Rating Form No. 8". I believe its use is required in classified positions, but until the field is classified it need not be used. Some Regions are using it.

Mahan's paper didn't get the consideration it deserves, and in this day of intensive planning, I wonder if you are right in assuming that a desire to follow the objective set for us by Secretary Wilson necessarily leads to abuse. Of course markets differ. Not all of you can sell as many products as Mahan. Also we have sold minor products at a loss because of high administrative costs. However, the point that impressed me in Mahan's

paper is that he knows where his profits are because he keeps a cost record all his own.

Further, it may interest some of you to know that Mahan has developed a market for all the blue spruce he can grow on a sustained yield basis and that he receives more for a tree six feet high than the same tree would be worth if left until it becomes a two-tie tree. Also, on at least one Douglas fire tie sale the brush, which some of you pay for having burned, sold for more than the ties. As I said before, there is a difference in markets.

P. K.

REX KING

CROOK

SAFFORD, ARIZONA

1. There is no question but that Mr. Scott's paper opens up a big problem and one that is going to be viewed from different angles.

One of the most pertinent things that he says is "What are these *offices* of ours?" To emphasize the rhetorical affect of his question I submit the following:

One of the rangers on the Crook suggested the other day that since he was already using a trailer for transporting his horse and camp equipment why not install a box contraption, a'la old fashion chuck wagon box, to hold forms, drafting board, typewriter, etc., and do the necessary report work, form filling, (most of our reports are reduced to forms to be filled in) rough platting, etc., right on the ground, while everything was fresh on his mind. Now, would a ranger sitting out in the middle of his district pounding a typewriter while his horse was munching oats on one side and the bacon trying on the other be doing office work or field work? Answer that one—and incidentally how about the ranger's idea in itself?

Kep says the Forest Service "office complex" has always interested him. He is naturally mild. Some of us are not. But anyway, I think "Complex" is a good word for it. It seems to me that during the 20 years or more that the controversy has been raging that we have built up in our minds various diverse meanings for the terms "office" and "field". Perhaps for the time being and for the purpose of insuring an unprejudiced attitude of mind in studying the problem we should substitute some other term for office. Perhaps, if we substituted "headquarters" or "central control" we would be able to think more clearly. The term "paper work" is a dangerous one, and should be entirely left out of any serious study.

Our enterprise or objectives or whatever term it is most desirable to use, is made up of various operations generally called jobs. Practically all of these to complete fully require motions or acts, some of them on the ground, involving travel, instruments, and manual labor, etc., and others involving the compilation of figures, the making of permanent records, and the transfer of these records sometimes to other parties in the form of correspondence. All of the latter require paper. All of the various acts and motions are a part of the job and are all necessary to complete it. The ones performed on the ground would generally be useless without those on paper. The motions requiring paper, drafting instruments, typewriters, etc., are most economically carried out at a central point where these things are

available and where access can also be had to past records. It is of course impossible to make a survey unless you are on the ground, and it is foolish to think that a man can most economically compile his records on horseback. We have heretofore drawn an arbitrary line and said one step was "office" work and the other step "field" work. There would be no objection to that were it not for the fact that "field" work is so often glorified and "office" condemned and vilified without consideration as to its relation to the enterprise as a whole. It seems to me that the sensible way to analyze the job as a whole and assign those parts to the office which can most economically be done there. That is the most effective way to accomplish results. Of course if we do not know what results we are striving for it really makes no difference whether we kill the time in the office or the field.

As a matter of fact, I think the ordinary person when he is fighting his head about "office" work has in mind clerical labor. There is a distinction, which should be kept in mind in making a study, between the class of work necessary to complete the field job, such as compilation, reporting etc., and the 100% clerical work which need not involve a so-called field man at all, such as bookkeeping, mimeographing, filing, etc. This latter class is the one that is ordinarily kept in view when time studies, flow of work, etc., is being discussed. Although in our loose thinking we include the other, when we use the term "office".

That picture of Supervisor Swensen is perhaps biased due to the fact that the author did not like music. It is real however, and we have all seen the same thing and not always as long ago as 20 years. Perhaps if we take into consideration the changed stage setting and substitute 25 cent cigars for Bull Durham, golf pants for the hair oil, and golf clubs for the guitar. who knows but that- - - . The real situation in that office (which from now on will probably be famous) was probably this. Supervisor Swensen had nothing else to do so he *loafed in the office*. Now suppose, instead of that, he had *loafed in the field*. Suppose instead of playing the guitar in the office he had gone out and hung around a timber sale or gone horseback riding with some agreeable permittee—would the picture have been the same and would it have called forth the same condemnation? The point is, what difference does it make where you loaf as long as you are loafing. Of course Mr. Swensen probably had work to do, but he did not recognize it, so the result is the same. Incidentally, I wonder who was to blame that he was not made to see the work and anyway the story is not complete. Maybe after the Forest Assistant had spilled the ink and left, the Supervisor had to buckle down and work. And one thing more; would it have made any real difference in advancing the enterprise if he had spent his time making plans, which never would be used, or arguing with the Regional Office instead of playing the guitar?

There is no argument but that we should eliminate waste wherever it occurs, and that there is ample room for study of all of our procedure, but lets keep in mind that the flow of work extends from the marking of a tree or the running of a range line clear through to the closing of the case in our files, and that one part of it is as important as another part. regardless of where it is done.

Clerical work, or if you desire, office work, has been the target of discussion and reforms for lo these many years. Everytime that a neighboring forest springs a new one we feel impelled to install it without "researching" to see if it fits or is needed in our own case. We have improvements, including sheets A to K, electrical adding machines, and many others that might be open to question if we were called upon to justify them in terms of results or dollars saved. Much of this has been due to the fact that reform generally comes from the outside rather than as a result of studied needs from within. Mere cutting down time, when the objective is merely the saving of time for its own sake may result in a sacrifice of completeness and finality of the work. As a matter of fact there is no use spending time and effort to save time and effort unless there is a place to put the time and effort which we save. We can sell the idea of time saving much more quickly and be in a better psychological position if we point out and describe the new job first. I mean we should keep our eyes ahead rather than backward. One of Scott's most pointed statements was the one to the effect: why develop technique on a job which is in itself useless and which might as well be cut out entirely.

If we narrow the problem down to the purely clerical operation we find that the factors are not uniform. Each office must be largely considered by itself, although there are many principles and operations which fit all cases. We have little leeway in the way of size and arrangement of rooms, windows, doors, heat, etc. We have to take what we can get in small towns. This makes the arrangement of desks, files, etc., purely local problems, but one repaying study because the savings of steps is important. Filing in the ordinary Supervisor's office is not a large job, and is one in which accuracy is more important than speed. My own studies point to the fact that far more time is lost because of confusion and misinterpretations of designations (on my own and other officers' parts) and in the misfiling of papers than is lost because of slow work on the part of the clerk. As a matter of fact, running all through both the clerical and other work, there is a great loss of time due to confusion, by which I mean, the doubt in a person's mind as to the exact action he should take, which results in hesitancy, the taking of time for thought, and the consultation and conference with others. In large offices work operations are highly specialized and repetitive. A person does the same thing so frequently that the motions become automatic. The range of our work is so wide and so many of our jobs reoccur so infrequently that the automatic factor is lost and we must expect slower work. However, we can make a great stride to overcome this by carefully worked-out, accurately described, and accepted job descriptions, or plans of work, and the best way of doing that, it seems to me, is to make one; test it, study it, and improve it until it actually does work.

2. Not being familiar with the rating scheme mentioned by Mr. Hilton, I do not understand the first part of his discussion. Off hand, I would say however, that any scheme or system based on divisions, such as operation, office, lands, etc., is wrong and will get us nowhere. Those divisions, while perhaps effective at one time are unwieldy and artificial now.

There has never been any doubt in my mind from the very start that once having embarked on work analyses and work plans we should take

them seriously and go the whole way. If after careful study and consideration we budget a man's time in the form of a work plan, then by all means we should judge his accomplishments and also his expenses in comparison to that budget. Not to do so, is an admission that we do not believe in the plan idea or do not have confidence in our product. Until we have a better and more detailed system for judging quality of accomplishments, I suppose we will have to rely on the time element. That is, we set up in the budget so many days for a job on the basis of a certain standard of quality. The determination of the time actually spent on the job will be comparatively easy to get and the quality will have to be estimated by sample inspection, for the time being. As to the last three paragraphs on page 17—"check and double check" with special emphasis on objectives.

3. Our most important products on the Crook are water, keeping the soil at home, and forage. The first two are not salable in the ordinary sense of the word, and are intangible and very difficult to fix a value for. The last one is so hedged-about by expediency, equities, and numerous other things that it is impossible to realize its full commercial value. Under these circumstances any attempts to make a district pay might lead us into "international" complications. Nevertheless, I believe that a valuation should be placed on all of our resources to the best of our ability, and our costs compared to them, not with the idea of making them return a profit to the Government, but with the idea of regulating our costs, and of emphasizing to the public that it is actually getting something for these same costs.

WALTER L. SCHIPULL

MONTEZUMA

MANCOS, COLO.

1. The late Wm. Wrigley, Jr. expressed his ideas about management to a reporter in the following true story which he related (not in his own organization).

The branch manager got word that the big boss was coming to see him. The branch manager thought that he would show the big boss what sort of a worker he was and so ordered all hands out to work overtime wrapping packages. He worked with them.

The big boss came and caught them at it—just as he was supposed to do. But he did not show any signs of liking it.

"What in thunder are you doing" he asked.

"Getting the stuff out to the customers, big rush you know—"

"And you doing the wrapping?"

"Helping out. Yes sir, helping the folks out."

The big boss exploded.

"Don't you know", he said, "that I can hire all of the boys I want to do the wrapping at \$15.00 per month?" "What do you think that I pay you for? What I want you to do is to sit on your hind end, put your feet on the desk, smoke the biggest cigars that you can buy, and think up ways to make this branch make money."

Sometimes, I think that a similar illustration as this story exists on many of our forests where *field work* seems to be the thought so vital with most of us, and might be compared to wrapping the packages. By this I do not mean to imply that *field work* is unimportant in any sense of the word,

but I do believe that its importance is overstressed in many cases when compared with office work. We are likely to start some field work too hastily without enough planning as to the benefits to be derived therefrom and as to the best method to accomplish it when a good plan would have saved both time and money. I think that at times we are too rapid in our judgment of a man's work by basing it upon the percentage of field time that he has to his credit. It is an easy matter to compare the percentage of field time of various forest officers and note the differences on a form, but this is only a start toward a real analysis of their work because it does not represent quality. Upon further analysis, it may be found that the person with the least percentage of field time has accomplished his work more effectively because of a better plan and more forethought originating in the office. This should be to his credit.

We have found through an office analysis of our field work that it can be systematically arranged to good advantage and that the time spent in this work is worthwhile in that the plan produced is workable. Likewise, plans for the office work have proven very helpful. In either case we feel that the time spent in making the plans was used to advantage, and if this is true, there is reason to believe that more work along this line would be justified.

2. I have nothing to add to the present system.

H. L. PLUMB

LEE P. BROWN

C. F. RITTER

OLYMPIC

OLYMPIA, WASHINGTON

Scott's article regarding the need for office analysis brings out some good ideas. It seems to us that the office work of the ranger is in greater need of study than the office work of the Supervisor's staff. We take for granted that the Supervisor has to do office work up to about 50% of his time. We say that the ranger must spend about 70% of his time in the field; the emphasis is always on the field time. Yet we are increasing the amount of office work the ranger must do. The new cost accounting system adds some, the new detailed trail constructions and maintenance records add a little, more detailed fire reports a little more, frequent changes of instructions still more, larger improvement programs with greatly increased supplies of equipment to look after yet more, and so on. You all know that the office load is increasing. But we still insist that the ranger is essentially a field man and emphasize that to the point that office work is sometimes neglected. Now how can anyone say that a ranger should spend 70% of his time in the field without an office analysis? As a matter of fact, few rangers do spend 70% of their time in the field. The plan of work is supposed to give us the answer, but those were made out on the assumption that the ranger must spend a certain amount of time in the field, and that office time must be cut to the minimum. The monthly trip plan reports show that we did not allow enough time for office work.. It seems to me that we should recognize the office work of the ranger as being of equal importance with his field work.

Since the drive for more accurate records has been initiated, the at-

tempt to assist the ranger in his office work has we believe been quite general. If the ranger is going to do the same amount of field work, he must conduct his office work in a more efficient manner. Better typewriters have been furnished them, which helps. Small adding machines would also be helpful. Filing will have to be kept strictly up to date; some additional furniture and fixtures may be necessary for better order; and during the field season a separate room should be provided where the ranger can work without being unnecessarily disturbed. Where rangers are located in towns or along main roads, the amount of time consumed by the public is considerable, and then he has to work nights and Sundays to get the work done so he will be ready for the next field trip. For the present, a study of the office layout and the methods employed by each ranger, with improvements supplied as indicated by the study, will do a lot to better the situation. Detailed analysis of a few ranger districts as a start would determine the usefulness and the best methods to be followed in making an analysis; and if these were found to be practical, then an analysis of all districts would be in order. It is always a good plan to "Try it out on the dog".

There is also a need for study of the Supervisor's office work. Undoubtedly every supervisor has studied his layout and has made changes designed to increase the output. However many of us are limited by space, and it is simply a matter of doing the best we can with what we have. Perhaps someone from the Regional Office would be able to see things that we do not. We would welcome suggestions. We would like to know how many letters an average Forest Service filing clerk should file in an hour, how long on the average it should take to find a letter when called for, how many payrolls of certain size a clerk should get out in a day, etc. This would give me something definite to work on. This could be obtained by getting the data from a limited number of offices and averaging results.

We agree with Scott that too much stuff crosses our desks. To read it all one would have to be at his desk all the time, but luckily we don't have to read all of it. A lot of material is found in our publications in which we are not particularly interested, yet someone else may be and it all helps the pulp and paper industry, and the Olympic has lots of hemlock, so we are not worrying about that. But in our letters and instructions there is often room for improvement. Letters and instructions are frequently written that require hours of time for the recipient to find out what the writer intended to convey. Everyone is guilty, from the Washington Office down to the Supervisor. If a letter or instructions sent out from the Washington Office which goes on to supervisors, is not clear, and even one hour extra time on the average for each person is necessary to understand the circular, then considerable time is wasted. Possibly one or two hours extra time by the author would have saved 160 hours; and if a letter of that kind goes to the ranger, it will run into—oh, what's the use—too many anyhow.

Hilton is after something that we have all wanted for years—a basis for determining accomplishment of a ranger. No doubt a system can be devised for getting that accurate and comprehensive "Output Record" but we want to be careful that the medicine is not worse than the disease. To be of real value, each Forest should have its own rating standards, because no two Forests are exactly alike; and often for a Forest it would be unfair to rate

one district against another because of variations in climate, business, accessibility, supplies of men, etc. It is a known fact that men have been misjudged because of circumstances over which they had no control, and others who get the "breaks" have received good ratings and also promotions. This was because certain accomplishments stood out plainly, but the reasons behind did not. On one part of the Olympic Forest in 1931, 187 inches of rain were recorded, on another part only 16 inches fell, and that mostly in the winter time. Three districts have no grazing work, the other two have, slash hazards in some are worse than in others. To work out a system from which you could make accurate comparisons would be very detailed and cumbersome; and like the one Hilton had on the Medicine Bow, would probably soon be discarded. Before we try something new, let's give the inspection system a chance. Better inspections during the past few years have worked wonders, and nothing can take the place of a thorough, fair, helpful inspection in work as diversified and widespread as ours. We, as an organization, have of late years developed a tendency to grab new ideas and drop old ones before the usefulness of either has been proven. We are dirt foresters. Let's keep our feet on the ground.

C. S. WEBB. J. K. DWINELLE

KOOTENAI

LIBBY, MONTANA

1. Scott's paper opens a large and important subject. To a much greater extent than should exist, the average Supervisor's office is considered as a necessary evil maintained for the purpose of keeping the books and collecting reports from the rangers, compiling and submitting them to the Regional Office where many of them are again worked over and submitted to the Forester and nothing more thought of the whole thing until time to submit the report at the end of the next period. If we can watch our list of reports due in and out and keep them moving on schedule we are too apt to feel the office is functioning nicely. Of course, certain reports and statistical records are necessary to good management, but how many of us know which ones are essential to real needs and which are useless? We certainly need much more analyses of the things we are doing with a view to determining their relative usefulness as well as more analyzation of our office methods, habits, procedure and efficiency. The clerical analysis and work plan is chiefly a list of jobs and a rough determination of time necessary to do such jobs. It indicates how much force is needed to carry on the work we are doing at present. To that extent it is good. We need to go farther and institute a scheme or analysis which will indicate how much we are doing too well or of too great a degree of refinement and what we are not doing thoroughly enough. Each forest can go a long way in this with their own problem. In addition to this it is believed an expert detailed to analyze the whole problem as it effects all offices throughout the entire Forest Service will be found necessary since a Supervisor's office is without power to relegate much work to the realms of usefulness. They can relegate much that way so long as it is of local nature and to that extent it is our function to do so.

An office should be looked upon as a tool necessary for reaching the desired accomplishments through our field force and higher offices and the better the tool works the greater use it will prove to be. Office should not

be an unnecessary expense, but should prove a justifiable operating expense necessary to the most efficient economical and dividend paying operation of the whole business under management. It should be considered as a tool for the means of control. Its purpose is to provide a major control point for the entire operation, including personnel, assignments, sales or receipts, expenditures, costs of all and different sorts of activities and a co-ordination of work and workers so as to establish the best standards, and objectives and secure the best results possible.

Certainly it seems all will agree we need to give thorough consideration and study to suitability of quarters, equipment, appliances, forms, methods, personnel and the like. Training of office personnel and measurement and control of output are important factors, the latter being possible only where other influencing factors have been studied and brought up to the best standards. Yes, the Forest Service has a long way to go in this problem.

2. A fair output record can be obtained by the study of the accomplishment of the work plan. There is set up in the plan enough work to keep the ranger busy throughout the year. This setup of work may or may not cover all that should be accomplished in his district and is planned in accordance with a fixed priority. At any period the plan can be checked against accomplishment. However, this does not tell the story. The work must be inspected to see if it is accomplished to the standards that are set up. Because he builds fifty miles of trail during the season does not mean that he has a high rating unless the quality is such that it will meet present standards to a degree which is little too good, or little too poor.

The relative weight given the different activities must vary according to the work on the district. On one district there might be but a small amount of management work and a large and complicated PR job. In this case the relative weights would have to be so arranged as to give PR a higher rating. Perhaps this is the stumbling block.

It is not necessary to have a 100% inspection of a man's work. A good idea of his work can be had by going over parts of the various kinds of work. If good results are found on one timber sale it is strongly indicative that his other sales are in the same condition: whereas, a sale in poor condition indicates to the inspector that he must look at more or all of this man's sales before drawing a definite conclusion. It seems imperative that the work planned and standards in plans must be compared with quantity of accomplishment and standards of accomplishment in the analyses of output.

C. J. OLSEN

TOIYABE

AUSTIN. NEVADA

I. Scott's discussion has emphasized two things that we need first of all:

1. To study and learn just what part of our office work is necessary and really valuable and to eliminate that part that is unnecessary or that cannot show sufficient value or use of the result to be started or continued.

2. A study of the method of doing the necessary job looking toward the best way to do the job—all things considered.

It goes without saying that the first study above mentioned is of higher priority and will involve everyone from the Washington Office down. Nevertheless there is no good reason why the study of methods should be delayed for neither can be completely finished and the study of method should first of all consider necessity.

The thing that seems to complicate the study of necessary and worthy office expense is the fact, as discussed by several in previous papers, that this will involve the correlated effort of the whole organization. No one questions that on the whole office work is important and necessary, but how much is of justifying importance is the question.

I have done considerable thinking recently about diary and time analysis and annual job sheets, and in order to get the best information available I circulated a request to the twenty-six Forest Supervisors in R-4 for a copy of the diary analysis and annual job sheet in use on each Forest. The replies covered more than twenty different ways of doing the job with varying degrees of intensity. It has been impossible to pick out any one method that I believe is the best, but a combination of a number of them will I believe furnish the basis for the best method of diary analysis and annual job sheets that I have reviewed to date. This is not saying that it is the best method available, but emphasizes the need for determining what is necessary and valuable, and a study of the method to be used in getting it.

II. In connection with accomplishment records, Professor Walter Rautenstrauch on page 15 of Discussion 5 has stated some fundamentals which he believes are essential. I am impressed with his statement, which, for convenience, follows:

1. "The object or objects to be measured must be defined in terms of their specific characteristics, particularly those characteristics which relate to their functional uses.

2. "The units of measurement employed should relate to the characteristics of the things to be measured and should be commonly accepted by those who measure or deal with the results of measurement.

3. "The means or instruments of measurement must be created and standardized.

4. "The results of measurement should be coordinated and formulated for use in comparison on commonly accepted standardized bases."

Going back to the last paragraph of Hilton's paper in Discussion 5 I am submitting part of an actual accomplishment record of one of the Rangers on this Forest. This may be somewhat risky, though it is not submitted as perfect, but I believe in many respects it meets the fundamentals outlined by Professor Rautenstrauch. The tabulations are made from diary analyses which serve in a dual capacity. This is followed up year after year for each Ranger, and a concise statement of actual conditions as found in the field is included.

“A summary of the analysis of Ranger Blank’s time, on an 8-hour day basis, follows:

JOBS	Time Planned, Days					Days Actually Worked					Miles	
	Office & Hdq		Field		Total	Office & Hdq		Field		Total	H	Auto
	Travel	Job	Travel	Job		Travel	Job	Travel	Job			
Recurrent:												
Operation	80.125	3.875	14.250		98.250	49.750		7.875	4.875	57.625	60	413
Range Management	11.625	20.000	125.250		156.875	11.750		6.938	69.062	69.062	18.688	634
Forest Management	1.375	1.000	3.875		6.250	1.500			.250	1.500	1.500	12
Lands	1.000	.375	4.500		5.875	.750			.750	.750		
Total Recurrent	94.125	25.250	147.87		267.25	63.750		14.813	74.187	84.125	1703	1059
Non-recurrent:												
Operation	1.500	1.500	7.500		10.500	5.375		7.813	40.812	35.500	59	1273
Forest Management	8.000	.500	1.500		10.000	11.250		8.125	38.750	19.500	30	1734
Range Management						1.500		8.500	45.250	16.625	73	577
Lands		.500	1.500		2.000			.250	1.250	1.250		30
Total Non-recurrent	9.500	2.500	10.500		22.500	18.125		24.688	126.06	114.25	162	3614
Grand Total:	103.62	27.750	158.37		289.75	81.875		39.501	200.25	182.87	1865	4673

“On the basis of calendar days he worked a total of 288 days, of which 209 days, or 73 per cent, were away from headquarters, and 79 days, or 27 per cent, were spent on office and headquarters work. Of the 209 days away from headquarters, 112 days were away from this Forest.

“Ranger Blank made a total of forty trips, classified as follows:

Character of trips	Trips of one day or less				Trips of more than one but less than 2				Trips of more than 2 and not more than 3				Trips of more than three days			
	No. of trips	No. of days	Av. No. days	% of tot. trips.	No. of trips	No. of days	Av. No. days	% of tot. trips.	No. of trips	No. of days	Av. No. days	% of tot. trips.	No. of trips	No. of days	Av. No. days	% of tot. trips.
By horse, with or w/o auto	9	8½	1-	22½									10	77½	7.75	25
By auto	14	13½	1-	35	4	8	2	10	1	2½	2½	2½	2	11	5.5	5
Totals	23	22	1-	57½	4	8	2	10	1	2½	2½	2½	12	88½	7.37	30

III. Certainly public funds should not be spent unless it can be shown that there is a need for the expenditure and that the returns in the future will be at least commensurate with the expenditure.

As for putting a Forest on a commercial basis, I don't agree that this can or should be done at this time. In keeping with the previous paragraph, it is essential that a conservative monetary value be placed on such things as annual watershed protection, recreational value, and fish and game management and protection, which with the total receipts make up the total annual value to the public. In protection it is essential that the value of the destructible resources be known and that protection costs be held to the amount that we can afford to spend. We are all familiar with the difficulty involved in deciding this question.

J. V. LEIGHOU

GUNNISON

GUNNISON, COLO.

We can say what we will, the office is an important part of the administrative organization. We may get our ideas in the field, and certainly the field end dare not be slighted, but the field is not going to function properly unless the office is functioning properly. It is the main control point.

I firmly believe that we do too many non-essential things, particularly in the office. There are too many miscellaneous reports. We have not given the office end of the work enough study, but it needs a comprehensive study to include not only the supervisor's office but all along the line, because all must function together if we are to eliminate the excess paper work.

Plans are essential to proper organization but too often we make plans without sufficient basis, and too often we accumulate figures which are just nice to have but no real use is made of them. We should look at such work the same as at any other work. Is it going to be worth the effort? I sometimes think that we have a lot of material that is never used, or at least analyzed.

In regard to records of accomplishment, we must first have a basis on which to measure the job. In the past, I believe that the necessity for judging the man has overshadowed the real basis of the rating, and that is the job. First, we must be able to accurately measure the job before we can rate the man. Because of the many different kinds of work making up the job, it is particularly difficult, but I feel that it needs more study.

J. N. TEMPLER

HELENA

HELENA, MONTANA

1. Relative to Scott's paper, I should say that if the analyses made of Supervisor's office job load merely catalog the jobs that are being done, the analyses themselves are worthless and a waste of time and money. If, on the other hand, they select the jobs that are to be done, eliminate or postpone unnecessary jobs and correlate the jobs to be done with the available man-power and time, then the real reason for the objective setup bogging or breaking down is due to improper or poor planning.

Plans that succeed must have considered not only the man-power and equipment available but also its shortcomings, ability and will to do. It

surely must be recognized that ability, vision, and ambition differ somewhat in all of us and, no matter how much science in office management is at hand, if the office force is not imbued to a fair degree with the above qualifications the best of plans will be considerably handicapped.

There seems no valid reason for slighting or jeering at office work or procedure, and, with the gradual extinction or disappearance of the Paul Bunyan or Sam Bass type from our organization, our former misconception of offices and the work done in them is being relegated to the limbo of forgotten things. And literally that is the only place for it.

However, we must not confuse office work with, using the word in its military sense, office detail. Who of us cannot recall the days when a considerable amount of office detail was performed because there were no jobs set up for us or because we lacked vision or the will to discover worthwhile jobs? This is rapidly being corrected by our new work plans, however, and the grumbling one hears about office work is quite often in the nature of an alibi. There is, though, and has been, a very perceptible trend toward increasing paper or office work at the expense of field work. Of course, the officer responsible did not intend that the report, plan, or information required would penalize field work. Most often he failed to consider the various degrees of office efficiency among the field force or expected it to perform the work after hours. Therein lay his mistake and such mistakes very often mark the new recruit to the Regional Office, the fledgling Supervisor or the new Assistant Supervisor. I once knew a Supervisor who measured the value of his office by the amount of matter with which he encumbered the mails.

Office production may be divided into three fundamentals no less than can factory production, and these are design, supply, and control.

Design is made up of objectives, processes and procedure.

Supply is composed of funds, materials, equipment, men and management.

Control involves the following:

1. Proper means to relate authority and responsibility in the organization in such a way as to come together in one man.
2. A system by which the information needed in making decisions affecting the business is collected and made available in a digested form to the deciding executive.
3. The confinement of minor detail decisions to the minor executive nearest the point of action while assuring that policy and co-ordination decisions are made near the center or head of the organization.
4. System for the transmission of orders.
5. Follow-up to insure compliance with decisions, orders or instructions.

Possibly we err worst in the first two instances, i. e. design and supply. We are too prone to lose sight of the real objectives, too liable to let our offices take on the appearance of Squire Jones' in Hoop Pole Township and too often handicapped through lack of modern equipment. All of the above factors help to bring about such instances as cited by Mr. Munns.

Problem of Measuring Accomplishment.

This job is, in my humble opinion, the most important of any of the duties faced by the executive, since it not only has a direct bearing on production, but also on the advancement of himself, his force, and his business; to say nothing of the effect on his conscience.

We certainly cannot secure an accurate and comprehensive record regarding personnel if we make such mistakes as that found in the example exhibited on page 6 of Pamphlet No. 5, and I have long pondered the question as to whether or not we habitually refine simple problems to such an extent as to surround them with a fog of extraneous matter having no particular value.

DONALD E. CLARK, E. A. SNOW ARAPAHO HOT SULPHUR SPRINGS, COLO.

1. Walker's definition, "The function of the office is to facilitate the direction of the organization" is okeh. The realization of that function and the extent of its importance as compared to field work for the same purpose may be secured most satisfactorily by an analysis of the work done in the office and in the field. Surely most of us are spending plenty of time in the office, but are we not top-heavy with numerous reports, plans and "new" jobs, and weak on "directing" activities? The answer is—well, debatable; in other words, we do not know without the assurance as given by facts.

2. We have seen one of Hilton's ratings which he described, i. e., by separate tabulation of jobs to be done under various branch activities, each evaluated on the basis of its importance and then by accomplishment. This system is readily conceivable to be too detailed to be practicable and worthwhile. It, however, is the only method we have seen which approaches an "accurate and comprehensive Output Record".

A comparison of the ratings from year to year on men now on or recently with this forest indicates that there is considerable variation in the judgment of different Supervisors, their methods of arriving at ratings, or their ideas of "an average Ranger", or possibly a combination of these factors. Many of us have, no doubt, heard the remarks "Oh, well, ratings don't amount to much in the long run in the average case because increases in salaries are very limited", or "because the Regional Personnel Officer has a pretty good lineup on the men in the Region and doesn't need these ratings to make up his mind". How important are personnel ratings? In justice to those rated the ratings should be at least reasonably accurate and comparable throughout a Region.

We all should have a somewhat similar picture of "average" work. Possibly there is need for a little training along this line, and in methods of arriving at ratings. We would like to see how the ratings of other men in the Region stack up with those on this forest.

Ratings on the basis of objectives as set up and agreed upon should govern—not the characteristics of the man. Does not the "Rating Given Individual" under "Quantity of work" take invariably into consideration quality as well as quantity because of the lack of accurate and comprehensive Output Records? If so, why not reduce the weight given to personnel characteristics?

J. F. CONNER

HARNEY

CUSTER, SOUTH DAKOTA

I believe a general criticism of all of us could be made that we have been too eager to invent some new system and discard the old rather than make an analytical study of a system already in use and attempt to improve and adopt it to our needs. For example, it is proposed in one of the papers to build up another record to add to our already burdensome number of records. It is true we need this information to properly rate a man on Service Element 15; quantity of work, but don't we already have the beginning for this in our Ranger District Analyses?

When we revise this plan at the first of each season and write up the trip schedules, we add as special jobs under the major activity to which it belongs, all the non-recurrent work which the ranger is expected to undertake during the year. This should be a full year's work and all of this properly done should entitle the man to a 100 per cent rating on Service Element 15. If unforeseen work comes up which the ranger must handle, such work should be added to his plan and at the same time he should be relieved of a corresponding amount of work previously scheduled, provided of course there has been no change in conditions since the job load was originally agreed upon. This might occur by a suspension of some of his timber sale activity, a sub-normal fire season or other conditions which could not be foreseen at the time the plan was revised.

The ranger is required to make monthly reports on his trip schedule accomplishment. Inspection outlines are furnished on which he is required to show the result of his inspection. The Supervisor makes his general ranger district inspection, at which time he checks the ranger's inspection forms to determine the quality of work being done.

We have our monthly cutting reports on timber sales that gives us the volume of timber work. The ranger's free use report gives the amount of work under this activity. The ranger's grazing report, together with his properly filled in inspection forms tells you if the grazing work has been as heavy as was planned for. You have from reports in the Supervisor's office a complete record of each ranger's work on fires. In fact, don't we already have pretty complete records of each man's work. It seems to me that what we need to do is make more use of the records we already have rather than add another record to an already large number? I have the feeling that the more records we can eliminate and still have the information needed, the more progress we are making.

WM. R. KREUTZER

COLORADO

FORT COLLINS, COLO.

Scientific office management certainly has an important place in the Forest Service organization. Undoubtedly considerable attention and time have been given to the so-called field work. This has brought about what Scott calls "field-mindedness" and perhaps may have over-stressed the importance of the field work and lead to more field work than is justified.

It seems to me that all offices and office work should be so organized as to have a definite purpose to carry out, with carefully selected employees who are adapted and trained in the work assigned to them. Such office

employees, of course, should be equipped with intelligence, health, enthusiasm, earnestness, and a sense of responsibility, ready to do their work and furnished with the proper tools for its accomplishments.

It is my opinion that we to some degree have failed to grasp the importance of the "office" as a managing factor of our forest business and units. A high percentage of field work, requiring numerous field trips, or considerable travel is costly, and will increase the cost of administration or production, if overdone or if there is too much travel duplication on the part of the various forest officers while in the field. A large percentage of the business and jobs that have been handled in the field by the Supervisor (Manager) in making field contacts is being very successfully managed by the corporation by applying scientific office control or management. If we do not use the office as the chief managing factor, then, why should we have an office at all? We might do away with the office if such be true, and handle all of our work from the field. This cannot very well be done. It is too costly and does not provide a place for all of the records that we must have in the managing of the forest business.

In the up-to-date and effective office management, as also in the field management, there is a place for both line and staff employees.

While under the United States Department of the Interior some thirty years ago the old service known as the "Forest Reserve Service" was organized under what is known as the "Military Plan". There was one man at the head and directly responsible to him, one person had unlimited control over a branch of the service's work. Each of these persons was necessarily a many-sided individual, and "passing the buck" from the top down was the practice.

Since that time line and staff duties and functions seem to have been developed and dispatched very largely by the field workers, i. e., the Supervisors and Rangers under a modified functional plan.

A strictly functional plan of organization developed by branches has its advantages but it works like a machine and it lacks humaneness. The line-and-staff organization on the other hand possesses characteristics which seem to indicate that it is a much better plan than either the old Interior Department "pass the buck" organization or the modified functional organization. The emphasis is laid on the men rather than on the various operations: it has more of the human element in it than the purely functional plan. The staff is composed of planners; the line is made up of workers. The staff (experts or specialists) will instruct the principal line officers as to the best methods for handling their work, and how to use the plans previously made and tested by the staff specialists, and the line officers get the work done in accordance with these plans.

Unnecessary clerical work should be eliminated in order to reduce the cost of the overhead.

There seems to be an ever increasing amount of clerical work. After making careful studies and analysis it seems that this could be trimmed down effectively.

The Ranger's clerical work should be reduced to the minimum since

they are essentially field men and their chief duties are concerned with getting the work done in accordance with plans and specifications that will be given them with each job or project to be undertaken.

ROY A. PHILLIPS

NEZPERCE

GRANGEVILLE, IDAHO

1. Considering Scott's estimate of the time our permanent personnel actually spends on office work as a fair approximation, it is logical conclusion that 90 per cent and possibly 99 per cent of our offices are in dire need of an application of administrative research. In fact, I believe that the study should begin with the office and end with the field. That would, I believe, tend more effectively to bring about a proper balance between the two.

We find, for instance, on studying the accounting system in the Supervisor's office, that the ranger can be relieved of a lot of bookkeeping by having an allotment control kept only in the Supervisor's office, with the result that considerable duplication of effort is eliminated. About all the ranger needs to know is the number of man days he is allotted by projects or activities; yet how often have we seen a ranger bogged down at the end of the month trying to balance out his financial statement by an actual dollars and cents basis.

There has always been a woeful lack of coordination between the office and field it seems, and an overlapping of authority—too many men all trying to do the same thing; all trying to keep their hands on all the strings. This is probably due mainly to specialized training. The chief clerk, executive assistant or whatever he may be called may be highly trained in his particular line, yet woefully lacking on administrative ability, in other words he is only a bookkeeper. The Supervisor may be an excellent field man but decidedly lacking in the technique of accounting, yet instead of training the executive assistant in administrative work and turning over the bulk of the office administration to him, he lets him remain a bookkeeper and in turn bogs himself down in a lot of unnecessary office detail. I think we should all benefit by a better understanding of the other fellow's job, and certainly no organization would deserve a very high rating if the leader cannot impart his experience to the personnel and leave the stamp of his personality in the realization of an efficient smooth working organization that will endure even when deprived of leadership temporarily. This is, after all, but the acid test of leadership.

Yes, the office is just about as important as the field, and in emergencies the office organization must be strong enough to dispatch and correlate action in the field and flexible enough to expand sufficiently to take on added burdens. For instance, I expect the office manager to assume charge of all accounting and clerical operations and to be in a position to hire and supply several hundred men if occasion demands without breaking down regular routine. An attempt is made to train each individual clerk or typist to assume greater responsibility so that their regular jobs can be filled with temporary help when necessary. It is the same proposition as that of training a three man trail crew to act as the nucleus for a fifty man fire crew, only it is much easier of accomplishment as the office crew

is fairly stable while the trail crew is available only for a period of a few months at the most.

2. It has long seemed to me that one of our greatest weaknesses is the ability to rate or rather recognize accomplishment; perhaps not so much of individuals as that of organizations and units. Perhaps this is due principally to the fact as Hilton aptly states, of the most of us "being more interested in getting the work done than in making a record". Then too some of our accomplishments are relatively intangible when it comes to measuring them up. Fire fighting reflects something of this and probably much expense might be eliminated and about the same accomplishment reached were it not for the fact that so much enters into the scheme of things that cannot be accurately gauged. Men working under the stress of excitement are apt to "shoot the works" regardless of expense or results, or may go to the other extreme in a failure to use reasonable measures because of discouragement and the conviction that either the situation was hopeless or that natural influences would intervene in time to save the day. While all this is probably an exaggerated example of what actually happens in organization practice, yet it is existant to some degree in just about all we do. Most of us are not martyrs by choice, and it is a perfectly natural human trait to alibi mistakes, making it extremely difficult to get the true situation as to the relative efficiency of the organization.

It is a well known fact that records of accomplishment are of immense value in accelerating production along all lines where such records are kept. An added stimulus is given to workers where a competitive spirit is aroused through a comparison of accomplishment and when we wish to accomplish some definite objective we almost always do so by a record of accomplishment. I think we are all familiar with the old scheme of getting action out of Ranger A by formula of citing Ranger B's accomplishment. This is about the only method available where records are not kept and is quite effective and much used.

3. I do not doubt that every ambitious ranger some time or other has visualized a self-supporting ranger district and doubtless most of the men in charge of ranger districts have at some time or other engaged in the promotion of business. Too much zeal in this direction has caused some of us some embarrassing moments through the sale of choice bodies of timber, leaving more inaccessible large adjacent areas with the prospect of any future sale materially depreciated. Some of our overstocked grazing allotments have resulted through the desire to swell receipts. Those of us having had our fingers burned may be over cautious and a little slow to promote forest resources, particularly when we have seen the result of glutted timber stands and over-stocked ranges, and in the latter case experienced the administrative grief that has accompanied the adjustment of range problems.

On the other hand, it may be that the job of merely conserving resources has become so ingrained in many of us that we have lost sight of the need to exploit forest resources. Without question a drive along this line would bring about a tremendous increase in receipts. Instead of letting the public come to us for what it wants as we do now and then often be forced to chisel out of us the things they want, it might be better to evaluate and list

the things we have for sale and step out in the role of salesmen with an organized advertising campaign. We would not want to attempt to compete with lumber companies in the exploitation of timber resources in this particular region, but we have tremendous natural resources in recreation and fish and game, and could no doubt work out a plan for bringing in considerable revenue. In grazing we are accomplishing about the maximum in the matter of revenue for the Forest now, due perhaps to the keen competition that exists for range. Trespass stock and free use stock are kept at a minimum and the tendency is to crowd quite closely the actual carrying capacity of the majority of ranges.

With the present economy program in full swing for both the State and Federal governments, and the urge to cut appropriations to the bone, it would seem that the time is ripe to plan and initiate such a campaign. Public sentiment must be recognized and we well know that there are storm clouds in the offing that may at any moment develop into a destructive storm of criticism if we do not exercise eternal vigilance and all the ingenuity at our command to keep the public properly aligned.

RALPH S. SPACE

BLACKFEET

TREGO, MONTANA

Reference is made to Mr. Mahans article in Lesson 5.

It is true that ranger has a vast resource to manage but does it necessarily follow that the forests should be run in a business-like manner. The term business-like manner as used by Mr. Mahan is not to be confused with efficient manner, but implies that the forests should be run on a dollars and cents basis; that for every dollar invested by the government there should be a profit in money returned.

We have often thought of this, held it up as the ideal, rated forests by this method, and apologized for our inability to make the forests pay. At present most of us believe the forest never will pay in the same sense as a business pays. True a few forests have shown a profit but I speak of the service as a whole.

I look upon the Forest Service as a protection agency, and in this respect is comparable to the Army and Navy. What are the functions of the Army and Navy? To protect the nation, its rights, lives, property and resources. Do they pay in a business sense? No, they do not and we do not believe they should. Bismark made the German army pay but the people of this nation do not approve of such methods. Should we do away with the Army and Navy because they do not pay? No, we recognize them as a necessary expense, an expense that we do not dare to do away with as long as the enemies of the nation exist. If these enemies should go out of existence we would gladly do away with both the Army and Navy.

The Forest Service is a similar organization. We have such an organization for protection purposes, to protect our lands from erosion, our forest resources from fire, insects, and waste, our forage from overgrazing, our game from destruction by man and beast, our watersheds from being denuded, our scenery from fire, etc. The cost of this protection is a necessary expense that the nation must bear. It pays to protect these resources, not

in a business sense, but in the same sense that it pays to have an army and navy. Should the enemies which the Forest Service fights cease to exist the Forest Service would be a useless burden to the people and be done away with at once.

Why do we charge for timber, grazing, special uses, etc? Is it to make a profit? If so, why don't we charge for trapping, hunting, fishing, camping, watershed protection, etc.? As I see it the charge for timber and grazing privileges is made in order to maintain a commercial balance. If we granted grazing and timber cutting privileges free of charge the people who obtained these privileges would be so favored that they would undersell their competitors and hence disturb the balance of the industry. This is also shown in our granting of special uses. The uses that do not enter into competition with outside industries we grant free of charge. We charge for those that compete with other private industries.

The granting of hunting, fishing, and camping privileges do not disturb industries, hence no charge is made. If fur raising should become a stabilized industry and trapping should interfere with it we would be required to make a charge for such privileges. Even though we could figure out the amount each person is benefitted by watershed protection, we would not charge those benefitted. No industry is disturbed by the benefits of this protection.

If we could grant all uses without disturbing the economic balance, I see no reason why we should not do so.

Let us not get unduly disturbed because the Forests do not pay; it is not likely they ever will. However, this does not say that we should not work toward the most efficient handling of the forest that is possible, we should obtain the maximum production of desired quality, at minimum cost. We should give the people of this nation, for whom we are servants, the maximum protection of their rights and property that we can with the equipment and personnel they furnish.

R. J. BOWERS

BEAVERHEAD

JACKSON, MONTANA

The last sentence in Mahan's third introductory paragraph made me think of a similar statement that an enthusiast could have just as well made when we entered the world war: "Put General Pershing in the front line trench, whether with crack troops or not, and within a short time all military objectives would be taken from the enemy." "Put a railroad President in as Section Boss, etc., etc., for the wonders he would perform for that section of railroad rights-of-way."

Mahan's plan has only two very, very simple fundamental steps in building up the receipts from a Ranger District:

1. A thorough survey of all resources.
2. Plan for method of sale, or how to put them on the display shelf.

The first fundamental step made me smile, when I started out to check over the surveys of resources on my own Ranger District, and discovered that I have a Ranger District that has only a very partial (not thorough) surveys—surveys of all kinds made by past field crews, and technical and adminis-

trative personnel, surveys which are cumulative since the forest inception for its resources.

I have a forest management text book which lists forest resources much in the order as listed by Mr. Mahan in his article. Mr. Mahan even listed fertilizer as a forest product, which I assume would be a product derived from forest leaf-mold or getting rid of some of our 30 year old sheep bed grounds for sale purposes. I would suggest that we add Princess Pine to sell for kidney sufferers and the ants in rotten logs and stumps that could be sold for chicken feed to ranchers in drought stricken areas along with the fruits, nuts, wild honey, grave blankets, etc., etc., that Mr. Mahan is selling to the public to increase receipts.

Regardless of the above destructive criticism that I make of Mr. Mahan's paper, there is real food for thought in the idea for new methods and new practices in the marketing of our resources.

I am not in accord with the idea to conduct a sales campaign to market the secondary products of our forest resources. In other words, to go into the berry and nut picking, or floral or nursery business in competition with legitimate private concerns. How can we hope to market and increase receipts in this class of products without placing restrictions on our forest visitors? Where would there be any profit in hiring a \$4.00 or even a \$2.00 per day huckleberry picker, who averaged 4 gallon per day, which are to be transported 50 or 150 miles to the nearest city at government expense, where \$1.00 per gallon would be top price?

On the other hand, I believe we should cut and sell our own timber in all sales. We can place logs in the deck as cheap or cheaper than the private operator, and gain silvicultural objectives, which means ultimate gain in receipts, in a more satisfactory manner to us than we are gaining under present system of sales supervision. A crew of three choppers could be employed steady for five or six months on my own Ranger District, cutting all the posts and poles that I sell annually to ranchers. These men could be trained to do satisfactory selection in their cutting without marking by a forest officer. They would do absolutely as told to do in cutting stumps low, and in lopping limbs and tops. The actual cost to ranchers per pole or post would be the same or possibly less than where they now have to rely on vagrant choppers each year.

We will be getting down to a business basis when we entirely sell our forage resources in terms of animal months and animal days use, instead of by number of stock for an inflexible period as we are doing. We can avoid or eliminate the matter of refunds both in timber and grazing uses when such policies in procedure comes about.

We need a policy that will permit us to lease for 99 years, or sell outright on the public auction block certain "sore thumbs" on our forest maps, instead of hanging on to these lands just because they were included in our forest creation. Even our land exchange policy will not permit for solution of some of these "sore thumb" problems now on our hands. If public domain additions come about we can eliminate some and avoid the creation of similar ones by these additions, so this question might afford to

wait until we go some place on the public domain question. Anyway, to get rid of such lands, by long time lease or sale would increase receipts and eliminate costly administration.

The idea of a thorough survey of all resources is not a new idea on the forests that I have worked on, but it is the best idea advanced in Mr. Mahan's paper, to increase receipts. As I recollect it, the two year intensive grazing survey made on the Custer forest in 1925 and 1926 cost in the neighborhood of \$10,000. This survey showed up numerous June 11, homesteads fenced in trespass. The solution was to place such land trespass under S. U. Permits, which increased S. U. receipts approximately \$1500 per year for that forest.

J. F. CAMPBELL

FREMONT

LAKEVIEW, ORE.

I must speak a word on behalf of what I believe is an important matter for discussion—personnel management.

The Forest Service has done much, consciously or unconsciously, along scientific personnel management lines. Yet there is much to be done. I have selected at random just a few phases of this important job.

Personnel management goes to the very foundations of organization and to some extent at least dictates what form that organization shall take. One writer has said "Efficiency is largely psychological". As an example of one way to lessen the efficiency of individual workers:

Take the nervous, energetic type of executive. He finds it much easier to write a report or make a decision than to ask for a recommendation or report from a district ranger or staff man. This type of executive will undoubtedly hang up a record for personal accomplishment and he may have a reputation of being a topnotcher. But do you think his staff and crew will be happy and that they will develop and that the accomplishment of each of them will be up to par? I think not for about the time they get a job well started they discover that the boss has relieved them, and about the time they get their report or recommendation ready to submit they find the boss has sent in his report without awaiting their recommendation. This will result in a let down on the part of the force as surely as 2 and 2 are 4, for to be happy and to work most efficiently a man must be made to feel that he is a necessary part of the organization.

Careful study is justified and necessary to determine a proper division of work, delegation of authority and definition of responsibility on any unit—and once this organization set-up is made, keeping in mind the needs of the management as well as of the workers, a reasonable effort should be made by the management to stick to it.

Fatigue is another interesting item. It is also largely mental and is therefore more or less subject to the control of management.

Occasionally we hear of some forest officer who certainly should know better, making a serious error in fire suppression. Are we sure he hasn't been worrying—wondering just where he fits in—are we sure he was in pretty good physical condition when he went to the fire—are we sure he

didn't overwork or go too much without sleep just before he made the error?

Several years ago I was building a telephone line along a river. There was no road or trail along the location. We had to chop our way through the brush—every foot of the way. It was July and the weather was pretty hot. I thought we should build $\frac{1}{2}$ mile of line a day. I noticed, however, that we got $\frac{1}{4}$ in the morning and only $\frac{1}{8}$ in the afternoon. Then I watched the crew. They seemed to be interested in the job; they seemed to work just as hard after lunch as they did in the morning but just couldn't get $\frac{1}{4}$ mile in the afternoon. Now I had no intention whatever of conducting an administrative study or research but I decided the extreme heat was using up some of our pep. So we changed our working hours, went to work at 7 and worked until 11—had lunch, took a rest, went swimming, returned to work at 2 and quit at 6. We found that we could build our $\frac{1}{4}$ mile in the afternoon just as easily as we could in the morning from that time on.

It is well known that we are prone to remember pleasant experiences longer than unpleasant ones and though we do retain the recollection of unpleasantness, time alleviates its sting. Applying this to our work, as in recommending a probationer for permanent appointment, are we not likely to be guided more by our personal feelings, which is usually friendly, than by the cold facts some of which may be unpleasant to recall? I think we are and many personnel cases could have been avoided if more heed had been paid to facts in deciding a man's fitness for retention; if we had looked ahead 10 or 15 years and tried to vision the kind of forest officer the probationer would be at that time. Had he the necessary qualifications to keep abreast of the developments that are sure to come, education, personality, physical fitness, and last but not least—judgment?

This same friendliness of feeling guides us pretty largely in our personnel rating. I am not decrying friendliness—without it the game wouldn't be worth the candle. It has an especially important place in our organization and upon it depend such priceless qualities as loyalty and cooperation. But why not keep a current personnel record or chart, which can be considered along with the other evidence at rating time?

Scott's article has much merit. I am particularly interested in his "Personnel Training" on Page 5 of the lesson for it ties in to my subject. We train our laborers, our guards, our scalers, our rangers in field work but we don't go in so strong for office training. Many of these men whom we train so carefully in field practices spend a large portion of their time in offices. They are expensive office help at best. Why shouldn't we give more attention to training them in this class of work or at least to setting up office procedure and eliminating some of the things that cut down production in this end of our plant?

In how many Supervisor's offices do the workers feel perfectly free to interrupt others at any time to ask a question which might very well wait an hour or so. How long does it take the interrupted one to get his mind back to what he was doing before the interruption? Experts tell us the time lost in this way is amazing. There are many phases of this distraction factor over which we have no control—among these are callers, telephone

calls, street noises, etc., but there are many we can control and I wish to discuss briefly two of them.

We have already stated that employees interrupt each other and that a great deal of time is lost thereby. Many business concerns have established office schedules. These schedules set aside certain times for conferences or discussions between employees. An employee thinks of something he wishes to ask another, he makes a note of the question on his tab. Perhaps by the time for conference there are a dozen items on the tab. These are all taken up at one time, thereby reducing "distraction time" very materially. There may be two or more conference periods during the day. There are also certain periods during which time there are no interruptions from employees unless something out of the ordinary turns up.

I believe such a schedule is well worth while not only because it protects the "interruptees" but also because it imposes a certain discipline which tends towards greater production. Following is a sample of such a schedule for a Supervisor. Schedules for the other members of the office would, of course, fit into it:

<i>Period</i>	<i>Work</i>
8:30 a	Read and assign mail.
9:15 a	Prepare day's schedule—sign vouchers
9:15 a	Conference with staff
10:00 a	Other routine
10:00 a	Planning
11:45 a	Trouble adjustment
11:45 a	
12:00	Sign mail
12:00	
1:00 p	Lunch
1:00 p	
1:15 p	Read and assign P. M. mail
1:15 p	
2:30 p	Planning
2:30 p	Conference with staff
3:30 p	Routine
3:30 p	
4:00 p	Dictation
4:00 p	Sign mail
4:30 p	Read bulletins, etc.

The other thing I have to mention is the matter of the desk. This also concerns the "distraction factor". I believe the majority of us are in the habit of keeping too many papers on our desks. I've seen a great many Forest Service desks with piles of papers on them. Some man, to segregate these piles, has built racks with dividers in them—but soon all the divisions are full. The need for referring to a certain letter arises while a man is concentrating on a certain case so he begins to search. Every time he picks

up a paper he is reminded of some other job he has to do and that sets up a lot of associated thoughts, perhaps he pauses in the search to worry a while about the other job. After a time he continues to look for the letter related to the work in hand, but 'ere it is located several other distracting papers are handled and worried about. If this man prepared a job list for the day, either the last thing the night before or the first thing in the morning and then secure the papers relating to the work at hand from the files or from the file clerk wouldn't his production increase? Those little 3x5 white cards the Service has are fine for such a job list.

